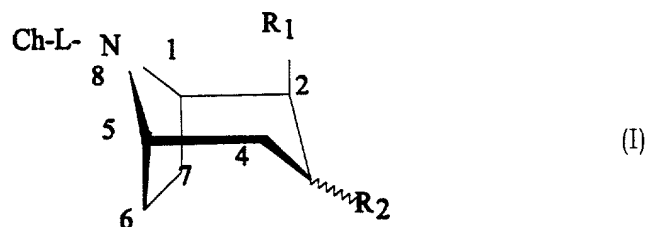


We claim

1. A radiopharmaceutical compound which is capable of complexing with  $^{99m}\text{Tc}$ , said compound having the following structural formula:



wherein  $R_1$  is  $\alpha$  or  $\beta$  and is selected from  $\text{COOR}^a$ ,  $\text{COR}^a$ , and  $\text{CON}(\text{CH}_3)\text{OR}^a$ ;

$R_2$  is  $\alpha$  or  $\beta$  and is selected from the group consisting of  $\text{C}_6\text{H}_4\text{X}$ ,  $\text{C}_6\text{H}_3\text{XY}$ ,  $\text{C}_{10}\text{H}_7\text{X}$ , and  $\text{C}_{10}\text{H}_6\text{XY}$ ;

$R^a$  is  $\text{C}_1$  -  $\text{C}_5$  alkyl;

X and Y are independently selected from the group consisting of  $R^a$ , H, Br, Cl, I, F, OH, and  $\text{OCH}_3$ ;

the bond between  $\text{C}_2$  and  $\text{C}_3$  is a single bond or a double bond;

L is  $-(\text{CH}_2)_n$  where n is an integer from 1 to 6, or  $-(\text{CH}_2)_n$  - (aryl, arylalkyl, ethenyl or ethynyl) -  $(\text{CH}_2)_m$  - where m and n are integers and the sum of

n plus m is an integer from 1 to 6; and

Ch is a tridentate or tetradentate chelating ligand that forms a neutral complex with technetium or rhenium.

2. A compound according to claim 1 labeled with a radionuclide that is complexed with the chelating ligand.
3. A compound according to claim 2, wherein the radionuclide is  $^{99m}\text{Tc}$ .
4. A compound according to claim 2, wherein the radionuclide is rhenium.
5. A compound according to claim 1, wherein the tropane analog has a  $3\alpha$ -group.
6. A compound according to claim 1, wherein the tropane analog has a  $3\beta$ -group.
7. A compound according to claim 1, wherein the chelating ligand comprises a bisamido-bisthiol group, a monoamide, monoamino-bisthiol group or a bisamino-bisthiol group covalently attached to linker L.
8. A compound according to claim 1, wherein the chelating ligand is a monoaminomonoamide bisthiol.

9. A compound according to claim 1, wherein the chelating ligand is *N*-(2-((2-((triphenylmethyl)thio)-ethyl)amino)acetyl)-*S*-(triphenylmethyl)-2-aminoethanethiol.

10. A compound according to claim 1, wherein the tropane ligand is selected from the group consisting of:

- a. 2 $\beta$ -Methoxycarbonyl-3 $\beta$ -(4-fluorophenyl)-tropane;
- b. 2 $\beta$ -Methoxycarbonyl-3 $\beta$ -(3,4-dichlorophenyl)-tropane;
- c. (S)-(+)-2 $\beta$ -carbomethoxy-3 $\alpha$ -(bis(4-fluorophenyl)methoxy)tropane;
- d. (1*R*)-2-(Methoxycarbonyl)-3-[[[(trifluoromethyl)sulfonyl]oxy]trop-2-ene;
- e. (1*R*)-2-methoxycarbonyl-3-(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- f. (1*R*)-2 $\beta$ -methoxycarbonyl-3 $\beta$ -(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]octane;
- g. (1*R*)-2 $\beta$ -methoxycarbonyl-3 $\alpha$ -(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]octane;
- h. (1*R*)-2 $\beta$ -methoxycarbonyl-3 $\beta$ -(4-fluorophenyl)-8-azabicyclo[3.2.1]octane;
- i. (1*R*)-2 $\beta$ -methoxycarbonyl-3 $\alpha$ -(4-fluorophenyl)-8-azabicyclo[3.2.1]octane;
- j. 2 $\beta$ -Carboxy-3 $\beta$ -(4-fluorophenyl)tropane;
- k. 2 $\beta$ -Carboxy-3 $\beta$ -(3,4-dichlorophenyl)tropane;
- l. 2 $\beta$ -Methoxymethylcarbamoyl-3 $\beta$ -(4-fluorophenyl)tropane;
- m. 2 $\beta$ -Methoxymethylcarbamoyl-3 $\beta$ -(3,4-dichlorophenyl)tropane;
- n. 2 $\beta$ -(1-Propanoyl)-3 $\beta$ -(4-fluorophenyl)tropane;
- o. 2 $\beta$ -(1-Propanoyl)-3 $\beta$ -(3,4-dichlorophenyl)tropane;
- p. 2 $\beta$ -(1-Propanoyl)-3 $\beta$ -(4-fluorophenyl)tropane;
- q. 2 $\beta$ -(1-Propanoyl)-3 $\beta$ -(3,4-dichlorophenyl)tropane;

- r. 2 $\beta$ -(Carboxylic acid)-3 $\alpha$ -(4-fluorophenyl)tropane;
- s. 2 $\beta$ -(Carboxylic acid)-3 $\alpha$ -(3,4-dichlorophenyl)tropane;
- t. 2 $\beta$ -Methoxymethylcarbamoyl-3 $\alpha$ -(4-fluorophenyl)tropane;
- u. 2 $\beta$ -Methoxymethylcarbamoyl-3 $\alpha$ -(3,4-dichlorophenyl)tropane;
- v. 2 $\beta$ -(1-Propanoyl)-3 $\alpha$ -(4-fluorophenyl)-tropane;
- w. 2 $\beta$ -(1-Propanoyl)-3 $\alpha$ -(3,4-dichlorophenyl)tropane;
- x. (1*R*)-N-Methyl-2-hydroxymethyl-3-(4-fluorophenyl)-8-aza-bicyclo[3.2.1]oct-2-ene;
- y. (1*R*)-2-Hydroxymethyl-3-(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- z. (1*R*)-2-Carbonyl-3-(4-fluorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- aa. (1*R*)-2-Carbonyl-3-(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- bb. (1*R*)-2-(2-Hydroxypropyl)-3-(4-fluorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- cc. (1*R*)-2-(2-Hydroxypropyl)-3-(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- dd. (1*R*)-2-Propanoyl-3-(4-fluorophenyl)-8-norazabicyclo[3.2.1]oct-2-ene;
- ee. (1*R*)-2-Propanoyl-3-(3,4-dichlorophenyl)-8-norazabicyclo[3.2.1]oct-2-ene;
- ff. (1*R*)-2-Methoxycarbonyl-3-(4-fluorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- gg. (1*R*)-2-Methoxycarbonyl-3-(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]oct-2-ene;
- hh. (1*R*)-2 $\beta$ -Methoxycarbonyl-3 $\alpha$ -(3,4-dichlorophenyl)-8-azabicyclo[3.2.1]octane;
- ii. (1*R*)-2 $\beta$ -Methoxycarbonyl-3 $\alpha$ -(4-fluorophenyl)-8-azabicyclo[3.2.1]octane;
- jj. (1*R*)-2-Methoxycarbonyl-3-(2-naphthyl)-8-azabicyclo[3.2.1]oct-2-ene;
- kk. (1*R*)-2 $\beta$ -Methoxycarbonyl-3 $\beta$ -(2-naphthyl)-8-azabicyclo[3.2.1]octane;
- ll. (1*R*)-2 $\beta$ -Methoxycarbonyl-3 $\alpha$ -(2-naphthyl)-8-azabicyclo[3.2.1]octane;
- mm. (1*R*)-2 $\beta$ -Methoxycarbonyl-3 $\beta$ -(2-naphthyl)-8-azabicyclo[3.2.1]octane; and
- nn. (1*R*)-2 $\beta$ -Methoxycarbonyl-3 $\alpha$ -(2-naphthyl)-8-azabicyclo[3.2.1]octane.

11. A compound according to claim 1 selected from the group consisting of:

- a. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- b. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- c. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- d. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- e. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- f. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- g. N-[2-(3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(4-fluorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- h. N-[2-(3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- i. N-[2-(3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(2-naphthyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- j. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- k. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl)thio)ethyl)amino)acetyl]-S-

(triphenyl)-2-aminoethanethiol;

- l. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- m. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(4-fluorophenyl)tropane)((2-((triphenylmethyl)thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- n. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- o. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- p. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(4-fluorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- q. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(3,4-dichlorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- r. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(2-naphthyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- s. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- t. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;

- u. N-[2-(3'-N'-Propyl-(1''*R*)-2''β-(methoxymethylcarbamoyl)-3''β-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- v. N-[2-(3'-N'-Propyl-(1''*R*)-2''β-(methoxymethylcarbamoyl)-3''α-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- w. N-[2-(3'-N'-Propyl-(1''*R*)-2''β-(methoxymethylcarbamoyl)-3''α-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- x. N-[2-(3'-N'-Propyl-(1''*R*)-2''β-(methoxymethylcarbamoyl)-3''α-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- y. N-[2-(3'-N'-Propyl-(1''*R*)-2''-(methoxymethylcarbamoyl)-3''-(4-fluorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- z. N-[2-(3'-N'-Propyl-(1''*R*)-2''-(methoxymethylcarbamoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- aa. N-[2-(3'-N'-Propyl-(1''*R*)-2''-(methoxymethylcarbamoyl)-3''-(2-naphthyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;

12. A compound according to claim 2 selected from the group consisting of:
- a. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - b. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - c. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - d. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - e. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - f. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - g. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - h. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - i. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - j. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
  - k. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;



- l. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- m. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- n. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- o. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- p. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- q. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- r. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- s. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- t. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- u. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;

- v. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- w. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- x. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- y. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- z. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- aa. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- bb. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- cc. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- dd. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;

- ee. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- ff. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- gg. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- hh. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- ii. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- jj. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- kk. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- ll. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- mm. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- nn. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- oo. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;

- pp. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- qq. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- rr. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- ss. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- tt. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- uu. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- vv. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- ww. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;

- xx. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- yy. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- zz. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- aaa. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- bbb. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;

13. A compound according to claim 3 selected from the group consisting of:

- a. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- b. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- c. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;

- d. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(1-propanoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- e. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(1-propanoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- f. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(1-propanoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- g. N-[(2-((3'-N'-Propyl-(1''*R*)-2''-(1-propanoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- h. N-[(2-((3'-N'-Propyl-(1''*R*)-2''-(1-propanoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- i. N-[(2-((3'-N'-Propyl-(1''*R*)-2''-(1-propanoyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- j. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(methoxycarbonyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- k. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(methoxycarbonyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- l. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(methoxycarbonyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- m. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(methoxycarbonyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- n. N-[(2-((3'-N'-Propyl-(1''*R*)-2''β-(methoxycarbonyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;

- o. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- p. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- q. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- r. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- s. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- t. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- u. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- v. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- w. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;

- x. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- y. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide;
- z. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide; and
- aa. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]technetium (V) oxide.

14. A compound according to claim 4 selected from the group consisting of:

- a. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- b. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- c. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- d. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- e. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;



- f. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- g. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- h. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- i. N-[(2-((3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- j. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- k. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- l. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- m. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- n. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- o. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- p. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;

- q. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(3,4-dichlorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- r. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(2-naphthyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- s. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- t. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- u. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- v. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(4-fluorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- w. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(3,4-dichlorophenyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- x. N-[(2-((3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(2-naphthyl)tropane)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- y. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(4-fluorophenyl)trop-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;

- z. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(3,4-dichlorophenyl)tropane-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;
- aa. N-[(2-((3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(2-naphthyl)tropane-2-ene)(2-mercaptoethyl)amino)acetyl)-2-aminoethane-thiolato]rhenium (V) oxide;

15. A compound according to claim 5 selected from the group consisting of:

- a. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- b. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- c. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''α-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- d. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(4-fluorophenyl)tropane)((2-((triphenylmethyl)thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- e. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- f. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''α-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- g. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;

- h. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol; and
- i. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''α-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol.

16. A compound according to claim 6 selected from the group consisting of:

- a. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- b. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- c. N-[2-(3'-N'-Propyl-(1''R)-2''β-(1-propanoyl)-3''β-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- d. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(4-fluorophenyl)tropane)((2-((triphenylmethyl)thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- e. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- f. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxycarbonyl)-3''β-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- g. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(4-fluorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;

- h. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(3,4-dichlorophenyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol; and
- i. N-[2-(3'-N'-Propyl-(1''R)-2''β-(methoxymethylcarbamoyl)-3''β-(2-naphthyl)tropane)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol.

17. The compound of claim 1, selected from the group consisting of:

- a. N-[2-(3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(4-fluorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- b. N-[2-(3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- c. N-[2-(3'-N'-Propyl-(1''R)-2''-(1-propanoyl)-3''-(2-naphthyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- d. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(4-fluorophenyl)trop-2-ene)((2-((triphenylmethyl)thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- e. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(3,4-dichlorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- f. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxycarbonyl)-3''-(2-naphthyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;
- g. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(4-fluorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol;

- h. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(3,4-dichlorophenyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol; and
- i. N-[2-(3'-N'-Propyl-(1''R)-2''-(methoxymethylcarbamoyl)-3''-(2-naphthyl)trop-2-ene)((2-((triphenylmethyl) thio)ethyl)amino)acetyl]-S-(triphenyl)-2-aminoethanethiol.

18. A method for detecting the density of tropane recognition sites in a mammal as an indication of neurodegenerative or neuropsychiatric disorders characterized by changes in the density of dopamine transporters or dopamine neurons, said method comprising providing in a suitable pharmacological carrier a radiopharmaceutical compound according to claim 1 labeled with  $^{99m}\text{Tc}$ , injecting the compound into the mammal and scanning the mammal using a radiodiagnostic imaging apparatus.

19. A method for monitoring in a mammal neurodegenerative or neuropsychiatric disorders characterized by changes in the density of dopamine transporters or dopamine neurons, said method comprising providing in a suitable pharmacological carrier a radiopharmaceutical compound according to claim 1 labeled with  $^{99m}\text{Tc}$ , injecting the compound into the mammal and scanning the mammal using a radiodiagnostic imaging apparatus.

20. A radiopharmaceutical kit for preparing a radiopharmaceutical preparation, said kit comprising a sealed, sterile, apyrogenic vial containing a radiopharmaceutical compound of claim 1 and a reducing agent for labeling said compound with a radionuclide.

21. The radiopharmaceutical kit according to claim 20, wherein the reducing agent is a stannous compound.